IN THE CLAIMS:

16. (Twice Amended) An encoding method for encoding source video data, the method comprises the steps of:

encoding said source video data with a predetermined quantization step size to generate first encoded data;

detecting a difficulty of the encoding process of source video data based on bit amount of said first encoded data;

deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

encoding said source video data by using said optimum quantization step on encoding unit basis,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value,

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

Cancel claim 17.

18. (Twice Amended) An encoding method for encoding source video data, the method comprises the steps of:

encoding said source video data with a predetermined quantization step size to generate first encoded data;

detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

calculating an allocated code quantity which is varied depending on said difficulty so that said allocated code quantity is more increased when said source video data is more complex and said allocated code quantity is more decreased when source video data is more simple; and

encoding said source video data by an optimum quantization step size based on said allocated code quantity,

wherein the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

Cancel claim 19.

20. (Twice Amended) An encoding method for encoding source video data, the method comprises the steps of:

detecting motion vector of a macro block of said source video data;

encoding said macro block of said source video data by using a predetermined quantization step size and said detected motion vector to generate first encoded data;

detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

encoding said macro block of said source video data by using said optimum quantization step and said detected motion vector,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

21. (Twice Amended) An encoding method for encoding source video data, the method comprises the steps of:

selecting a predictive mode of a macro block of said source video data;

encoding said macro block of said source video data by using a predetermined quantization step size and said selected predictive mode to generate first encoded data;

detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

encoding said macro block of said source video data by using said optimum quantization step and said selected predictive mode,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

22. (Twice Amended) An encoding apparatus for encoding source video data, the apparatus comprising:

means for detecting motion vector of a macro block of said source video data;

first encoding means for encoding said macro block of said source video data by using a predetermined quantization step size and said detected motion vector to generate first encoded data;

means for detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

means for deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

second encoding means for encoding said macro block of said source video data by using said optimum quantization step and said detected motion vector,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

23. (Twice Amended) An encoding apparatus for encoding source video data, the apparatus comprising:

means for selecting a predictive mode of a macro block of said source video data;

first encoding means for encoding said macro block of said source video data by using a predetermined quantization step size and said selected predictive mode to generate first encoded data;

means for detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

means for deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

second encoding means for encoding said macro block of said source video data by using said optimum quantization step and said selected predictive mode,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

24. (Twice Amended) An encoding apparatus for encoding source video data, the apparatus comprising:

first encoding means for encoding said source video data with a predetermined quantization step size to generate first encoded data;

second encoding means for encoding said source video data based on supplied quantization step size to generate second encoded data;

transmitting buffer for buffering said second encoded data; and

control means for detecting a difficulty of the encoding process in said first encoding means, and for deciding said quantization step size, said optimum quantization step size being varied depending on said difficulty so that said quantization step size becomes smaller

when said source video data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple, and said quantization step size being dependent on a remaining capacity of said transmitting buffer so as to suppress overflow and underflow in said transmitting buffer,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

Cancel claim 25.